

Research and Analysis of Green Finance on Business Development of Commercial Banks

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Abstract. The introduction of green policies has continuously deepened the implementation of commercial banks in green finance. In this paper, Chinese commercial banks are the object of study, and green credit is taken as the main form of green finance, which is comprehensively analysed in terms of both financial performance and risk of commercial banks. Through the analysis of green credit, it is found that green credit is conducive to enhancing the return on total assets of commercial banks, which can promote its profitability and improve the financial performance of banks. The development of green credit can reduce the risk of bankruptcy of commercial banks. Taken together, green credit has the effect of improving the level of business development of commercial banks. The research in this paper has certain practical significance in the long-term development of green finance in China's commercial banks, and can put forward corresponding policy recommendations for the development of green finance in China's commercial banks.

Keywords: Green Finance; Green Credit; Commercial Banks; Business Development.

1. Introduction

Over the past decade or so, China's rapid economic development, urbanisation and industrialisation have been increasing, demonstrating the "China Power" everywhere. However, China's economic development in recent years, there are a number of problems, there is a deformed development model, environmental pollution continues to worsen, low resource utilisation and resource scarcity in a vicious circle. Calls for environmental improvement and structural transformation are growing, and such a development model is unhealthy. The Government is gradually realising that the urgent solution to this major problem is to incorporate green, environmentally friendly and frugal factors into economic development to form "sustainable development". One of the government's responsibilities is to explore and establish an "environmentally friendly and resource-saving" society. Finance is the bloodline of the real economy and serves the real economy. The green economy model has entered the financial field, and green finance has emerged as a major trend in China. The definition of green finance has many different opinions, but the general direction is unified, mainly refers to the financial sector and financial institutions to focus on green development, to assume social responsibility for the protection of the natural environment, in a variety of business and decision-making, including investment and financing, the environmental return, risk, cost and other factors into the business and decision-making process, and assessment of the potential environment. In 2012, the General Administration of Supervision of the People's Bank of China (PBOC) issued the "Guidelines on Green Credit", signalling the emergence of the concept of "green credit". Environmental factors are introduced into the credit business to form environmentally friendly credit, and matters related to green credit are clarified. The Green Finance Evaluation Programme for Banking Financial Institutions will be released in 2021, providing a basis for the financial sector to implement the Guiding Opinions on Building a Green Financial System issued in 2016. The promulgation of the policy indicates that green credit is an effective tool for commercial banks to realise green finance. In an interview on 19 November 2021, the China Banking and Insurance Regulatory Commission (CBIRC) revealed that as of the end of September 2021, the balance of green credit of 21 Chinese banking institutions reached RMB 14.08 trillion, an increase of more than 21% compared to the beginning of this year, and the non-performing loan ratio was also maintained at a

low level. Based on this, this paper provides an in-depth discussion on the operation and development of Chinese commercial banks and makes recommendations. It will play a positive role in enhancing the operational capacity of Chinese commercial banks and developing and improving China's green financial system.

2. Literature Review

The development of green finance is an inevitable requirement of the social responsibility of commercial banks, in addition to the external factors of social responsibility, it is also necessary to ensure that there is green finance green credit can promote the profit growth of commercial banks, good operation of the internal factors. Domestic and foreign scholars have conducted a certain amount of research on green finance green credit impact on commercial banks.

2.1. Foreign Literature

International empirical research on the impact of green finance on commercial banks, less use of green credit to test. Most of the literature uses the Equator Principles (Equator Principles), corporate social responsibility, corporate green reputation perspective. Therefore, this paper divides the empirical research of foreign green finance on commercial banks into these three categories.

2.1.1. The Impact of Adopting Equator Principles on the Operating Conditions of Commercial Banks

Equator Principles (Equator Principles) first appeared in 2002, the Equator Principles were created to solve the controversial issue of corporate social responsibility of financial institutions. Simply put, they are a set of corporate lending guidelines put forward by the International Finance Corporation (IFC) and ABN AMRO. According to Li Renjie, President of Societe Generale, "the Equator Principles actually go hand in hand with green finance, and the Equator Principles promote the practice of green finance in financial institutions through risk management methods and tools"[1].

Scholtens and Dam (2007) empirically analysed the operations of 27 financial institutions that adopted the Equator Principles and 57 financial institutions that did not adopt the Equator Principles and concluded that adopting the Equator Principles is a good way to promote green finance. Commercial banks that adopt the "Equator Principles" bring good credibility, reputation, and reduce the risk of lending, but due to the implementation of green finance also brings additional costs for commercial banks, the bank is not able to maximise the benefits[2]. In the same year (2007), the International Finance Corporation (IFC) conducted a similar survey and found that commercial banks adopting the Equator Principles and similar principles of social responsibility, due to the requirements of the principle greatly increased costs in the short term, resulting in a decline in the bank's performance rather than an increase. 'Dwyer, B. (2009) stand in the perspective of financial institutions to review the development of the Equator Principles, and ultimately concluded that the implementation of the Equator Principles reduces the benefits gained by financial institutions such as commercial banks[3].

2.1.2. Green Finance Improves the Impact of Corporate Social Responsibility on the Business Situation of Commercial Banks

Green finance is an economic activity that supports the green environment and promotes the efficient use of resources. The implementation of green finance cannot be separated from green investment, and the concept of green investment comes from corporate social responsibility. Therefore, some foreign literature explores the impact of commercial banks' practice of green finance from the perspective of CSR.

The research results of Aupperle and John (1985) show that the competitiveness of commercial banks that actively undertake social responsibility is greater than that of commercial banks that do not undertake social responsibility or less[4]. However, there are also literature findings that show different from the above, Choi et al. (2010) through an empirical study of the relationship between

the level of social responsibility disclosure of commercial banks and the financial performance of commercial banks found that the social responsibility of commercial banks has little difference in the impact of the financial performance of commercial banks, and there is no clear positive or negative impact for financial performance[5].

2.1.3. The Impact of Green Finance on the Business Situation of Commercial Banks by Improving Corporate Green Reputation

Davies (2003) argues that a company's green reputation is a combination of its green identity, which refers to how employees within the company perceive the company's green management, and its image, which refers to how stakeholders outside the company perceive the company's green management, especially customers[6]. The difference between corporate green reputation and corporate reputation is that corporate green reputation emphasises the way it is formed without green management. The green management mode of commercial banks is undoubtedly an important part of the practice of green finance, the implementation of green finance not only lies in the innovation of green financial products, but also includes the green management means of commercial banks. Therefore, some of the foreign literature to explore the impact of commercial banks to practice green finance from the perspective of corporate green reputation.

Chami et al. (2002) believes that commercial banks practicing green finance policy can get a better reputation, and a good corporate reputation brings a higher rate of return[7]. Geafferey (2009) believes that the implementation of green finance makes the resources flow to environmental protection, energy saving, emission reduction enterprises, to a certain extent, to inhibit the development of high-energy-consuming, high-polluting enterprises, so as to achieve the effect of protecting the environment, which will be supported by the government on the one hand, and on the other hand, will be supported by the government on the other hand. This will be supported by the government on the one hand, and on the other hand, it also greatly enhances the reputation of commercial banks themselves, easier to obtain the trust of the government and the people, more cash flow, and improve the profitability of commercial banks[8]. Cilliers et al. (2010) found that green marketing and recycling programmes and other green financial tools to role in environmental protection, so that socio-economic responsibility for the protection of the environment to undertake impact is conducive to improving the reputation of commercial banks, and a good corporate reputation will improve the competitiveness of commercial banks and affect the financial performance of commercial banks[9].

2.2. Domestic Literature

Relative to foreign countries, China's green finance started late, and the green financial system needs to be improved. Zhou et al. (2017) argued that China's green financing mainly relies on green credit, other green financing methods are only in the beginning stage, the overall scale is small, and the liquidity is low, and the systems and regulations are not perfect[10]. Therefore, the main form of green finance in China is green credit. This paper summarises the domestic literature on green credit into three main categories.

2.2.1. The Impact of Green Credit on the Competitiveness of Commercial Banks

Gong and Gao (2015) took Industrial Bank as the research object and studied the impact of green credit on the competitiveness of commercial banks, and the analysis showed that the development of green credit by Industrial Bank made its bank competitiveness increasing[11]. Gao and Gao (2018), in exploring the issue of green credit scale and the competitiveness of commercial banks through the cost analysis method and empirical research, showed that the scale of green credit is positively proportional to the competitiveness of commercial banks, the expansion of the scale of green credit is conducive to the improvement of the competitiveness of commercial banks, which can promote the progress of the industry, and the economy has been developed in a sustainable manner[12]. He et al. (2018) study also shows that the implementation of green credit in commercial banks effectively improves the bank's total return on assets, and the most obvious effect of green credit implementation

on improving the competitiveness of commercial banks is when the policy factors are not taken into account[13].

2.2.2. The Impact of Green Credit on the Sustainable Development of Commercial Banks

Sun and Li (2011), in analysing green credit and bank sustainable development, mentioned that the key to the sustainable development of commercial banks lies in the commercial bank's control of the environment and risk of financing projects, and found that the implementation of green credit can strengthen the commercial bank's credit risk management, so the implementation of green credit has a positive impact on the sustainable development of commercial banks[14]. Yu (2015) in the study shows that in the context of the development of finance, China's commercial banks in the form of credit to commercial banks and even the entire financial industry have the effect of promoting the sustainability of the development, not only that the implementation of green credit also promotes the common progress of society[15].

2.2.3. The Impact of Green Credit on the Financial Performance of Commercial Banks

Hu and Zhang (2016) in the commercial bank lending cost perspective to carry out empirical research, analysis found that the implementation of green credit will increase the cost of commercial banks, reduce bank profits, but if the bank can expand the total amount of loans can effectively offset the costs of carrying out green credit[16]. Zhang and Zhang (2019) concluded that green credit has a negative impact on the financial performance of commercial banks, but the corporate reputation obtained through long-term green credit can reduce the negative impact of green credit and improve the financial performance of commercial banks[17].

3. Theoretical Analysis

Since the development of green credit is the most representative way to implement green finance in China, the green credit system is more perfect compared with others, and the data of green credit is the most complete and accurate among many green finance data in China. Therefore, the theoretical analysis and empirical evidence in this paper will be explored from the perspective of green credit. The "three principles" is an important indicator for the development of commercial banks, in which profitability can be linked to the total return on assets of commercial banks, and liquidity and security are linked to the risk of commercial banks. In this paper, we will draw on existing academic literature to quantify the return on total assets and risk of commercial banks.

3.1. Green Credit on Commercial Banks Total Return on Assets Impact Path

On the one hand, the implementation of green credit by commercial banks is a manifestation of social responsibility, so if commercial banks can actively carry out green finance will be able to obtain a good corporate reputation in society. Commercial banks with a good green reputation can obtain encouragement and financial support from government departments and policy support, which will increase their revenue on green projects, overall profitability and thus improve their return on total assets. In addition to government support, a commercial bank with a good reputation may also receive support from customers and investors with environmental interests, which will enable the bank to obtain cash flow earlier and promote the development of commercial bank operations. The development of green credit business is actually a kind of broadening of traditional financial business, and the intermediate business of commercial banks has been enriched, and the profitability of commercial banks has been enriched as a result, which improves the total return on assets of commercial banks.

On the other hand, the implementation of green financial policies by commercial banks will additionally increase the operating capital of commercial banks. As green finance in China's commercial banks started late, there is no sufficient experience to learn from, the implementation of green credit needs to be carried out by commercial banks according to their own characteristics, in the process of figuring out green credit, there will be some trial-and-error costs. The various

regulations of green credit will, to a certain extent, make commercial banks lose part of their customer base. In the process of developing green credit, it is necessary to integrate environmental, energy-saving, emission reduction and other factors into the loan review process, and the complexity of the review requires commercial banks to invest manpower and time. Therefore, the implementation of green credit may also cause a reduction in the return on total assets.

3.2. Green Credit on the Commercial Bank Risk Impact Path

On the one hand, the development of green credit, so that the "two high and one leftover" industry without commercial bank financial support or loan cost increases, forced to transform and develop. Commercial bank funds flow to green, environmentally friendly industries, these green industries in line with the requirements of environmental protection and has the ability to develop sustainably, by the regulatory authorities to reduce the chances of punishment, loan default risk is low. Commercial bank loans are efficiently allocated, asset quality improves, non-performing loan ratio decreases, and the level of risk faced by commercial banks decreases.

On the other hand, green credit also has the potential to increase the non-performing loan ratio. Because there is a problem of passive renewal of commercial banks' credit, if they do not continue to lend to the "two high and one leftover" industries, it will lead to a break in their capital chain, making it difficult for them to return the loans they have lent out to commercial banks. Furthermore, the production of the "two high and one leftover" industries may cause harm to the environment and be punished or ordered to stop by the regulatory authorities, and the industrial economy will suffer losses and therefore not be able to repay the loans of the commercial banks, which will make the ratio of non-performing loans of the commercial banks increase, and the degree of risk faced by the commercial banks will increase.

4. Current Situation of Green Finance Development in Chinese Commercial Banks

4.1. Gradual Formation of Green Regulatory System

The China Banking Regulatory Commission (CBRC) issued the Green Credit Statistics System in 2013, which requires commercial banks to classify and issue green loans to environmentally friendly and resource-saving enterprises according to different criteria such as energy-saving and environmental protection projects. The promulgation of this policy means that China's green regulatory system has been further optimised and improved. The construction of the green credit assessment and evaluation system has developed in parallel, linking the development of green finance to the performance of top bank managers, and taking the results of green finance assessment and evaluation as an important basis for the evaluation of staff's performance and the development of the bank's business.

4.2. Rapid Development of Green Credit

Green credit, as one of the specific measures for the implementation of green finance, is developing rapidly. The credit business of banks is one of the most important financing methods in society, as shown in Table 1. The credit business of commercial banks accounts for more than 80 per cent of the total financing in society. Bank credit plays an important role in the development of social economy. In the credit business of commercial banks, the scale of green credit is also expanding, and the balance of green credit accounts for an increasing proportion of the total credit volume. The development of green credit optimises the credit structure of banks and reduces the incidence of non-performing loans. It guides the transformation and optimisation of industrial structure and promotes the sustainable development of China's society and economy.

5. Ways to Implement Green Finance in Chinese Commercial Banks

5.1. Green Operation Management

Green operation management is to raise the awareness of saving and environmental protection in the daily operation of the bank, use advanced technology and smart internal environmental management to reduce the loss of resources and energy in the daily operation process, reduce the emission of carbon dioxide and other harmful gases, and save paper, etc. to achieve the goal of green operation. For example, HSBC became the first commercial bank in the world to achieve carbon neutrality in 2005 by reducing carbon dioxide emissions and purchasing green electricity in its daily operations; the Bank of China promotes the saving of water, electricity and paper, as well as the implementation of the "green office" and "e-office". Bank of China has also implemented "green office" and "e-office", replacing offline meetings with teleconferences and video conferences; CCB has vigorously developed its e-financial service platform and promoted mobile phone banking, which has saved customer service capital.

5.2. Green Public Welfare Green Training

Commercial banks for the community to carry out green financial concept promotion, organise green seminars, forums and other activities. At the same time for employees also need to regularly carry out green training work, enhance the sense of responsibility of employee green finance. Participate in green public welfare activities, guide the community to appear more energy-saving environmental protection action participants. Pudong Development Bank has linked the knowledge of green financial concepts with the assessment and promotion of employees, and since 2008, it has conducted at least two training sessions on green financial topics every year.

5.3. Continuous Innovation of Green Financial Products and Services

Continuous innovation and development of green financial products to broaden access to funds for customers who need to carry out green activities. As the only commercial bank in China that has adopted the Equator Principles, Societe Generale has a higher diversity of green financial products than other domestic commercial banks, and its innovation of green financial products and services is also more systematic.

5.4. Establishment and Development of Green Credit System

Green credit mainly refers to the commercial bank lending activities will be environmental protection, energy saving, social risk, social responsibility, emission reduction and other factors and standards related to the protection of the environment, into the assessment of credit approval, so through the size of the credit scale, high and low loan interest rates, credit limits and other economic leverage, differential pricing to support environmental protection, energy saving and emission reduction, recycling economy, ecological environmental protection, etc., is conducive to environmental protection of industries and industries sustainable development, such as the size of the credit, loan interest rates, differentiated pricing. The sustainable development of the industry, as shown in Table 2 green credit is mainly invested in green projects, to provide support for the green industry in judging the market, identifying opportunities, and allocating resources, and at the same time, different levels of penalties for enterprises that do not comply with environmental protection and have environmental violations, and also actively guide the upgrading and transformation of high-energy-consuming and highly polluting industries. The implementation of green credit plays a key role in economic growth potential and serves the real economy efficiently. China Merchants Bank in green credit to credit business projects are divided into four major categories, for the production and operation does not meet the environmental and health requirements of the category of enterprises, prohibit the inflow of new loans, so that the compression of the exit. China Construction Bank has established the "environmental protection one-vote veto" system, for high energy consumption, high pollution and other enterprise loan projects, can be "environmental protection one-vote veto". Bank of

Communications has set up the Environmental and Social Risk Dynamics Programme (ESRD). Bank of Communications has set up a dynamic management mechanism for environmental and social risks.

6. Conclusion and Recommendations

6.1. Conclusion

This paper takes green credit as the main form of green finance and comprehensively analyses it from two aspects: financial performance and risk of commercial banks. Through the analysis of green credit, it is found that green credit is conducive to enhancing the return on total assets of commercial banks, which can promote its profitability and improve the financial performance of banks. The development of green credit can reduce the risk of bankruptcy of commercial banks. Taken together, green credit has the effect of improving the operation and development level of commercial banks. However, it seems that most of the commercial banks in China are treating the development of green credit only as a requirement to fulfil their social responsibility, and are not really treating green finance as a part of their own operation and development.

6.2. Policy Recommendations

The development of green credit has the effect of protecting the environment, protecting the ecology, promoting the economic transformation to green, reducing pollution, and forcing the "two high and one leftover" industries to transform and upgrade. If we want green finance and green credit to be implemented effectively, we need both external and internal promotion.

6.2.1. The Government is the Most Important External Factor

First of all, it is suggested that the government, according to the development of the times, timely introduction of relevant green financial policies, while elaborating on the general direction of green finance to give specific green financial implementation programmes, implementation methods, improve green finance related laws and regulations, through the construction of green information sharing mechanism, so that commercial banks can be more timely and fully understand the relevant information about the green environment, so as to better carry out the green financial activities. Secondly, we should strengthen the training of commercial banks on green finance. Secondly, strengthen the green financial supervision of commercial banks, increase the punishment for illegal operation, and increase the disclosure of green finance and other information. On this basis, subsidy policies, including government subsidies and tax incentives, can be introduced to reduce the costs associated with the implementation of green finance and promote the better development of green finance in the banking sector.

6.2.2. Commercial Banks Need to Improve Their Sense of Social Responsibility and Strengthen the Construction of Green Finance.

It is recommended that commercial banks combine themselves with the green financial policies promulgated by the government, integrate green finance into banking business, achieve full coverage of green business, and in terms of green credit, constantly improve the credit audit procedures, and integrate the green concept with the bank's own development concept. Secondly, establish and improve the special green finance department, introduce or cultivate green economy professionals to solve the problems encountered in the process of green finance in a timely and professional manner, and constantly research and develop new green credit products to reduce the cost of trial and error of commercial banks and improve the income of commercial banks in green finance. Finally, the development of a good reward and punishment mechanism, green financial products, green credit products and the performance of senior management linked to incentivise the contribution of all employees to the development of green credit in commercial banks.

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